

REMARKS/ARGUMENTS

This paper responds to the Office Action of January 20, 2004.

Applicant respectfully requests reconsideration of the application. Claims 1-38 are now pending, a total of 38 claims. Claims 1 and 28 are independent.

I. Petition For Extension of Time

Applicant petitions for a three-month extension of time, to respond to the Office Action of January 20, 2004, to and including July 20, 2004. The fee for this extension is \$950.00. Kindly charge the petition fee to Deposit Account No. 23-2405, Order No. 114596-08-4015.

II. This Amendment May Be Entered Under Rule 116

The current Office Action, at paragraph 37, explains that the claims have been examined on the basis that “circuitry” is equated to “software.” As explained in § V of this paper, no reasonable applicant responding to the previous Office Action could have anticipated this basis. Thus, these amendments could not have been earlier presented, and entry is proper now.

Further, these amendments do not alter the claims’ scope. No new issues are raised, and thus the amendments may be entered.

III. Summary of Interview

Applicant thanks Supervisory Examiner Meng-Ai An for two brief interviews during the weeks of May 10 and 17. It was agreed that the Chernoff ’028 patent does not disclose hardware “profile circuitry” corresponding to the claims, and that at most Chernoff ’028 discloses profile software.

Supervisory Examiner An indicated that she believed that the application would have to be examined further for compliance with § 103. Applicant believes that re-examination on this basis is the proper course for further prosecution.

IV. Specification and Drawings

A. Paragraph 3 of the Office Action

Paragraph 3 of the Office Action requests an amendment to the specification, but the Office Action is not understood. The first paragraph of the specification currently names all applications from which this application claims priority, and therefore fully complies with all applicable rules (*e.g.*, 37 C.F.R. § 1.55). Applicant is unaware of any rule that would require “references for IDS” to be stated in the Cross-Reference to Related Applications. If any requirement is raised, Applicant requests a citation to a specific rule number, so that Applicant may comply with that rule.

B. Previous Amendments

Formal drawings and a Preliminary Amendment were submitted November 1, 2000. Receipt and consideration of these papers are not mentioned in the Office Action, and have not been acknowledged by the Examiner.

A replacement copy of the November 2000 Preliminary Amendment was enclosed with the Response filed in October 2003.

Applicant requests confirmation that the formal drawings and Preliminary Amendment have been received and entered.

V. Claim 28

Claim 28 is discussed in ¶¶ 4, 18 and 37 of the Office Action. The Office Action expressly concedes that Chernoff '028 does not teach all elements of either claim 1 or 28. Thus, the § 102(e) rejection was not properly adhered to, or made final.

Claim 28 recites as follows:

28. A method, comprising the step of:

during execution of instruction of instructions in hardware pipeline circuitry of a computer, operating profile circuitry designed to detect and record, without compiler assistance for execution profiling, profile information describing a sequence of events occurring in the instruction pipeline circuitry, the sequence including every event occurring during a profiled execution interval that matches time-independent selection criteria of events to be profiled; the recording continuing until a predetermined stop condition is reached, the profile circuitry further configured to detect the occurrence of a predetermined condition, after a

non-profiled interval of execution, and to thereon commence of the profiled execution interval.

Claim 28 is directed to profile circuitry that cooperates with hardware pipeline circuitry of a computer. Claim 28 contrasts to profiling systems implemented entirely in software, for example, Chernoff '028. Applicant was the first to recognize that certain types of profiling could be implemented in circuitry to “[match] time-independent selection criteria of events to be profiled” and could profile “events occurring in the instruction pipeline.” A hardware “circuitry” implementation may provide the ability to monitor certain “pipeline” events that cannot be monitored in software, and may provide execution speed advantages that are unavailable in software implementations. These, and other example benefits of profiling “circuitry” (as opposed to software) are disclosed at pages 60-89 of this application.

A. The Office Action Itself Concedes That Chernoff '028 is Different From Claims 1 and 28, And Thus That No § 102 Rejection Is Proper

“For a prior art reference to anticipate in terms of [§ 102], every element of the claimed invention must be identically shown in a single reference.... These elements must be arranged as in the claim under review.” *In re Bond*, 910 F.2d 831, 832, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990) (emphasis added).

The Office Action (see, e.g., ¶ 37) expressly concedes that Chernoff '028 discloses only “memory” to “emulate” certain circuitry features. “Emulation” is a software process, not “circuitry” as recited in claim 1 or 28.

Nor does the Office Action suggest that Chernoff's “memory” performs the functions recited in the claim. Rather, the Office Action apparently agrees with Applicant, that the functions taught in Chernoff '028 are performed in software that is loaded into that memory. At best, Chernoff '028 teaches a different “arrangement” than is recited in the claims. This difference in “arrangement” is discussed further in Applicant's prior paper (Response of October 2003, at pages 11-13), and is sufficient to overcome a § 102(e) rejection.

The § 102 rejection should be withdrawn.

B. The Claim Interpretation Suggested in The Office Action is Impermissible

Paragraph 37 of the Office Action suggests that “circuitry” designed for, or configured for, a particular purpose, is identical to software in a “memory.” The Office Action provides no basis, backed by “substantial evidence,” to assert that one of ordinary skill would interpret the word “circuitry” as identical to software in a “memory,” or to the “memory” itself.

Where a claim term is a well-established term of art, that term “must be read as [it] would be interpreted by those of ordinary skill in the art.” MPEP §§ 2111 and 2111.01. If there is to be a departure from the established definition of a term, it is an examiner’s burden to come forward with a “reason” to depart from that definition, *Ex parte Charlton*, Appeal No. 95-4253 slip op. at 3 (BPAI Mar. 22, 1999)¹, backed by “substantial evidence.” See *Ex parte Toda*, App. No. 98-0078, slip op. at 4 (BPAI Apr. 26, 2001)².

The terms “circuitry” and “software” are each well established in the art. Computer engineers rely every day on the differences between the two words to communicate with each other. The Office Action provides no basis to believe that one of ordinary skill in the art would equate “memory” to the “profile circuitry” recited in claim 28. For a first example, Exhibit 1 to this paper is an example of ordinary descriptions of memory chips.³ There is no mention of “profiling” in them. As a second example, Chernoff ’028 recognizes the difference, noting that his “memory” only “emulates” certain circuitry features, and is not identically “circuitry” or “hardware” as recited in claims 1 and 28.

Because claims 1 and 28 recite “circuitry” that is absent from Chernoff ’028, the rejection may be withdrawn.

VI. Requests for References

In the Response to Office Action of October 2003, Applicant made requests for references under 37 C.F.R. § 1.104(d)(2). The January 2004 Office Action fails to respond to

¹ www.uspto.gov/web/offices/dcom/bpai/decisions/fd954253.pdf

² www.uspto.gov/web/offices/dcom/bpai/decisions/fd980078.pdf

³ Additional example information on memory chips may be obtained at <http://www.pc.ibm.com/us/accessories/memory.html> and <http://www.samsung.com/Products/Semiconductor/DRAM/TechnicalInfo/DataSheets.htm>

those requests in two respects. First, the January 2004 Office Action leaves out a number of words of the requests, as discussed in the following paragraph, and thus any rejections of these claims lacks prior art support. Second, the January 2004 Office Action makes no showing that the disclosure relied upon in the Ramaswamy '292, Chrysos '930, Lin '028, or Hoyt '751 references are properly combinable with the Chernoff '028 or Hammond '525 references to complete any rejection, or how the combination would meet any rejected claim.

Applicant again requests either references or an affidavit for each of the following propositions. Applicant also requests a showing that the teaching of the reference or affidavit is properly combinable with the other references relied upon to support a rejection.

- “profile circuitry ...configured to record profile information identifying each distinct physical page of instruction text executed during the profiled execution interval.” The Office Action makes no showing that Ramaswamy '292 ever mentions “physical pages,” and Applicant’s brief review of Ramaswamy '292 does not reveal any such mention.
- a profile that records an instruction reference “records the event of a page boundary of the address space occurring within a single instruction.” The Office Action makes no showing that Chrysos '930 ever mentions a “page boundary,” and Applicant’s brief review of Chrysos '930 does not reveal any such mention.
- a profile that records an instruction reference “records the event of a page boundary between two instructions that are sequentially adjacent in the logical address space.” The Office Action makes no showing that Lin '028 ever mentions a “page boundary,” and Applicant’s brief review of Lin '028 does not reveal any such mention.
- recorded profile information [that] indicates ranges of instruction binary text executed by the computer during a profiled interval of the execution, the ranges of executed text being recorded as low and high boundaries of the respective ranges.” The Office Action makes no showing that either Hoyt '751 or Senter '782 ever mentions “profile information,” and Applicant’s brief review of them does not reveal any such mention.

If no reference can be supplied to meet all limitations of the claims involved, allowance would be in order.

VII. Dependent claims

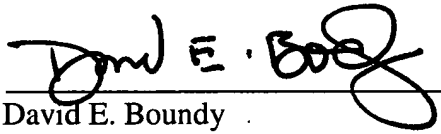
Dependent claims, 1-27 and 29-38 are patentable with the independent claims discussed above. In addition, the dependent claims recite additional features that further distinguish the art.

In view of the amendments and remarks, Applicant respectfully submits that the claims are in condition for allowance. Applicant requests that the application be passed to issue in due course. The Examiner is urged to telephone Applicant's undersigned counsel at the number noted below if it will advance the prosecution of this application, or with any suggestion to resolve any condition that would impede allowance. A Petition for Extension of Time for three months appears above. Kindly charge any additional fee, or credit any surplus, to Deposit Account No. 23-2405, Order No. 114596-08-4015.

Respectfully submitted,

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Dated: July 6, 2004

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